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branched chains of spores, which readily fall apart. Spores cylindric, obtuse at both ends, smoky-pellucid,  $5-6 \times 2.5$  mic.

Growing on wood and bark of Acer, under the bark; Preston, Ohio. The perithecia 100-150 mic. in diameter, loosely attached to the matrix, scattered or often closely crowded.

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### A SERIES OF SPECIMENS ILLUSTRATING NORTH AMERICAN USTILAGINEAE.

A. B. SEYMOUR.

In 1884, under the direction and encouragement of Professor T. J. Burrill, I prepared a systematic account of the Ustilagineae of Illinois, based chiefly on my collections of 1881 and 1882 and intended to be co-ordinate with the "Illinois Uredineae." But no botanical publications in this series were issued for many years and this manuscript with others remained untouched. Finally Mr. G. P. Clinton took up the study of the group, and with Professor Burrill's approval I consigned my interests to the former.

In nearly twenty years that have elapsed Mr. Clinton has been able to double the list of Illinois species. In addition to his years of study and his economic writings on the group in Illinois, he has recently spent two years at Harvard, where he has completed an exhaustive monograph of the North American species. His preliminary account was published in the Journal of Mycology for October, 1902.

The series of specimens to which reference is here made, was published under date of January 1, 1903, to illustrate Dr. Clinton's monograph. The specimens are those accumulated by both of us through our own collecting and by exchanges. They have all been verified and put in envelopes by Dr. Clinton. Fifteen other botanists have contributed specimens.

Of the 100 numbers, 63 are from Illinois, 19 from Massachusetts. Maine, New York and Mississippi each supply two. Jamaica and eleven states contribute one each.

Dr. Clinton's paper records 181 species and varieties with numerous hosts and localities. This fascicle of specimens contains 66 species and varieties representing 100 hosts or localities. Evidently much remains to be done in a future fascicle.

All botanists are invited to contribute additional material for distribution.

The main series of specimens entitled Economic Fungi is planned to illustrate plant diseases from a practical standpoint. One hundred copies are prepared and nearly every important

College and Experiment Station is a subscriber. Botanists have supported it generously, sending valuable specimens illustrating new practical results.

The supplements are intended to be scientific regardless of practical bearings. Fifty copies are prepared. Three supplements have been issued: A.—Phycomycetes; B.—Uredineae; C.—Ustilagineae.

It is desired to add to each of these and to prepare others. Much material is already in hand; more is desired. Botanists are especially requested to co-operate in the preparation of sets to illustrate their special studies as Dr. Clinton has done.

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## DICTYOSTELIEAE OR ACRASIEAE.

A. P. MORGAN.

Mr. Edgar W. Olive in the Cryptogamic Laboratory of Harvard University, has been studying the Acrasieæ. He has kept various members of this group of organisms in cultivation and under observation for five or six years. The results are embodied in a pamphlet of sixty pages or more, which is an admirable example of careful and critical work.

The order Acrasieæ is represented by a small group of mostly coprophilous organisms, comprising seven genera and twenty species. Knowledge of them began with the discoveries of Breffeld, Cienkowsky and Van Tieghem.

By Mr. Olive the number of species previously recorded has been nearly doubled and what is of more importance the life-histories of the species observed by him have been patiently followed out and their relation to kindred organisms clearly established.

The life-cycle of the Acrasieæ is separable into two well marked periods, one of vegetation and one of fructification. In germination the protoplasm of each spore issues forth and passes its vegetative stage as an amoeba; it absorbs nutriment, increases in size and becomes greatly multiplied by successive divisions. After a more or less prolonged independent existence as vegetating individuals the amoebæ congregate toward certain centers and form aggregations for the purpose of fructification. These colonies or *syncitia* develop into fructifications which show increasing complexity of structure from the slightly differentiated sessile aggregations of the simpler species to the complex stalked sori of those most highly developed. In the stalked forms the scramble for place and position among the amoebæ is something remarkable; for those forced to the center and com-